

ACKNOWLEDGMENT OF COMPLETION REPORT
FOR
TRONOX MINE SITES R6/R9
HIGHWAY 509
AMBROSIA LAKE, MCKINLEY COUNTY, NEW MEXICO

Prepared for

U.S. Environmental Protection Agency
Will LaBombard, Project Officer
1445 Ross Avenue
Dallas, Texas 75202

Contract No. EP-W-06-042
Technical Direction Document No. 1/WESTON-042-14-027
TDD No. TO-0001-42-14-27
WESTON W.O. No. 20406.012.001.0900.01
NRC No. N/A
FPN ID: N/A
CERCLIS ID: NMN000604077
EPA OSC: Jon Rinehart
START-3 PTL: Robert Sherman

Submitted by

Weston Solutions, Inc.
Cecilia H. Shappee, P.E., Program Manager
5599 San Felipe, Suite 700
Houston, Texas 77056
(713) 985-6600

July 2015

ACKNOWLEDGMENT OF COMPLETION REPORT

1. INTRODUCTION

On 20 August 2014, the U.S. Environmental Protection Agency (EPA) Region 6 Prevention and Response Branch (PRB) activated Weston Solutions, Inc. (WESTON®), the EPA Region 6 Superfund Technical Assessment and Response Team (START-3) contractor, under Technical Direction Document (TDD) No. 1/WESTON-042-14-027 (Attachment A), to support EPA Region 6 with conducting research and preparing project planning documents to support the Tronox Navajo Area Uranium Mine (NAUM) program. The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) number assigned to the Site is NMN000604077.

2. BACKGROUND

The Region 6 Tronox NAUM Area comprises approximately 100 square miles within the Ambrosia Lake Sub-District (ALSD) in McKinley County, New Mexico. The ALSD is located within the Grants Mining District (GMD), which is an area of uranium mineralization occurrence approximately 100 miles long and 25 miles wide encompassing portions of McKinley, Cibola, Sandoval, and Bernalillo counties of New Mexico. Main access into the Region 6 Tronox NAUM Area is provided via New Mexico State Roads 605 and 509. The Site is located in the ALSD, McKinley County, New Mexico approximately 25 miles northwest of Grants, and 3.5 miles northwest of the intersection of New Mexico State Highways 509 and 605.

The Tronox Mine sites consist of 22 Tronox Kerr McGee uranium mines that operated from the 1960s until approximately 1984. There are 22 legacy uranium mine operations that are eligible for Litigation Trust funding use in the Region 6 Tronox NAUM Area. All of these mines have gone through some form of closure operations and removal of operational surface features. Most of these mines were operated as wet mines, where the underground workings were dewatered and the collected mine water discharged to nearby surface drainage features such as creeks and arroyos. Little environmental data currently exists on these mines in general or specifically regarding risks to the public health and/or the environment and/or any threat abatement actions

that may be necessary. EPA Region 6 has been tasked to obtain the data required to evaluate the risks posed by these legacy mine sites and to conduct appropriate risk abatement activities.

The mines were developed and operated by Kerr McGee until 1984, when operational control was turned over to Quivira Mining Company, which was a subsidiary of Kerr McGee. The mines were sold/transferred to Rio Algom Mining Company in 1989. Rio Algom was acquired by BHP in 2000, which has now merged with Billiton to form BHP-Billiton.

3. SUMMARY OF ACTIONS

Upon receipt of the TDD on 20 August 2014 and the direction of EPA On-Site Coordinator (OSC) Jon Rinehart, the EPA Team began researching historical information about the previous mining, remediation, and closure activities for the 22 Tronox Kerr McGee uranium mines. The information was provided to the EPA for planning purposes. In October 2014, the EPA Team was tasked to develop background information for a temporary storage facility for low level contaminated soil and begin drafting a project specific procedure to determine exposure risk and action levels based upon these risks. The EPA Team provided an outline for a draft long-term storage facility for uranium mine waste in December 2014. The EPA drafted a document outlining a protocol to determine exposure risk and submitted the document to the OSC for review.

The EPA Team continued to support the removal assessment activities and advise the OSC on disposal options under TDD No. 1/WESTON-042-14-027 until the Tronox litigation was settled and dedicated funds enabled the EPA to award a Tronox specific Task Order (Task Order 0041) to continue site specific activities. Beginning 11 June 2015, work previously conducted under the Tronox Mine Sites R6/R9 TDD was transitioned to Task Order 0041. Documentation of work conducted and data gathered under this TDD will be included in the Task Order 0041 final deliverable.

This final report was prepared as part of the requirements of the Technical Direction Document (TDD) No. 1/WESTON-042-14-027 and serves as documentation of work completed to date.

4. LIST OF ATTACHMENTS

A. TDD No. 1/WESTON-042-14-027 and Amendments

☐

The EPA Task Monitor did not provide final approval of this report prior to the completion date of the work assignment. Therefore, Weston Solutions, Inc. has submitted this report absent the Task Monitor's approval.

☒

The EPA Task Monitor has provided final approval of this report. Therefore, Weston Solutions, Inc. has submitted this report with the Task Monitor's approval.

Attachment A

TDD No 1/WESTON-042-14-027 and Amendments

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD #: 1/WESTON-042-14-027

Amendment #:

Contract #: EP-W-06-042

Vendor: WESTON SOLUTIONS, INC.

TDD Title: Tronox Mine Sites R6/R9

Verbal Date:

Purpose: TDD INITIATION

Start Date: 08/20/2014

Completion Date: 03/31/2015

Effective Date: 08/20/2014

Priority: HIGH

Overtime Authorized: No

Invoice Unit:

SSID: A6KD

Work Area: Response / Removal

Project/Site Name: Tronox Mine Sites R6/R9

Work Area Code:

Project Address: Highway 509

Activity: Fund Lead Removal

County: McKinley

Activity Code: RV

City: Ambrosia Lake

Operable Unit:

State: NM

Emergency Code:

Zip Code: 87020

FPN:

Performance Based: No

Authorized TDD Ceiling:

	Amount	LOE (Hours)
Previous Action(s):	\$0.00	0.00
This Action:	\$50,000.00	0.00
New Total:	\$50,000.00	0.00

Specific Elements:

See Schedule

Description of Work:

See Schedule

Region Specific:

CERCLIS: NMN000604077

Misc 2:

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount
1	14	T	6A00	303DC6	2505	A6KDRS00	C001	146ARSC020-001	REMOVAL UPPOPT	\$50,000.00

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD #: 1/WESTON-042-14-027

Amendment #:

Contract #: EP-W-06-042

Vendor: WESTON SOLUTIONS, INC.

Project Officer : Will LaBombard _____ (Signature) _____ (Date)	Branch Mail Code: Phone Number : 214-665-7199 Fax Number :
Contracting Officer Representative : Jon Rinehart _____ (Signature) _____ (Date)	Branch Mail Code : Phone Number : 214-665-6789 Fax Number :
Contract Specialist: Michael J. Pheeny _____ (Signature) _____ (Date)	Branch Mail Code : Phone Number : 214-665-2798 Fax Number :
Contracting Officer : Michael J. Pheeny _____ (Signature) _____ (Date)	Branch Mail Code : Phone Number : 214-665-2798 Fax Number :
Other Agency Official : _____ (Signature) _____ (Date)	Branch Mail Code : Phone Number : Fax Number :

Specific Elements: Analyze -Data that has been collected.,Collect -Samples ,Document -The removal activities. Prepare a written report.,Support -The removal activities,Advise -The OSC on disposal options and completion of the removal activities.

Description of Work: The TDD should be initiated with \$50,000.

The contractor shall begin researching the mining activities, remediation activities, and closure activities, of the 22 Tronox Kerr McGee uranium mines in the Ambrosia Lake Area. Assessment activities of the mines shall include radiation meter surveys and collection of soil samples for analysis and evaluation. The information will be used evaluate the priority of removal activities.

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD #: 1/WESTON-042-14-027

Amendment #: 001

Contract #: EP-W-06-042

Vendor: WESTON SOLUTIONS, INC.

TDD Title: Tronox Mine Sites R6/R9

Verbal Date:

Purpose: INCREMENTAL FUNDING

Start Date: 08/20/2014

Completion Date: 03/31/2015

Effective Date: 08/20/2014

Priority: HIGH

Overtime Authorized: No

Invoice Unit:

SSID: A6KD

Work Area: Response / Removal

Project/Site Name: Tronox Mine Sites R6/R9

Work Area Code:

Project Address: Highway 509

Activity: Fund Lead Removal

County: McKinley

Activity Code: RV

City: Ambrosia Lake

Operable Unit:

State: NM

Emergency Code:

Zip Code: 87020

FPN:

Performance Based: No

Authorized TDD Ceiling:

	Amount	LOE (Hours)
Previous Action(s):	\$50,000.00	0.00
This Action:	\$100,000.00	0.00
New Total:	\$150,000.00	0.00

Specific Elements:

See Schedule

Description of Work:

See Schedule

Region Specific:

CERCLIS: NMN000604077

Misc 2:

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount
1	14	T	6A00	303DC6	2505	A6KDRS00	C001	146ARSC020-001	REMOVAL SUPPORT	\$150,000.00

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD #: 1/WESTON-042-14-027

Amendment #: 001

Contract #: EP-W-06-042

Vendor: WESTON SOLUTIONS, INC.

Project Officer : Will LaBombard _____ (Signature) (Date)	Branch Mail Code: Phone Number : 214-665-7199 Fax Number :
Contracting Officer Representative : Jon Rinehart _____ (Signature) (Date)	Branch Mail Code : Phone Number : 214-665-6789 Fax Number :
Contract Specialist: Michael J. Pheeny _____ (Signature) (Date)	Branch Mail Code : Phone Number : 214-665-2798 Fax Number :
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 10/29/2014 _____ (Signature) (Date)	Branch Mail Code : Phone Number : 214-665-2798 Fax Number :
Other Agency Official : _____ (Signature) (Date)	Branch Mail Code : Phone Number : Fax Number :

Specific Elements:

Base ORIG - Analyze -Data that has been collected.,Collect -Samples ,Document -The removal activities. Prepare a written report.,Support -The removal activities,Advise -The OSC on disposal options and completion of the removal activities.

Description of Work:

Amendment 001 - This amendment requests that \$100,000 be added to this TDD. The contractor will be researching historic information and developing background information for temporary storage facility for low level contaminated soils.

Base ORIG - The TDD should be initiated with \$50,000.

The contractor shall begin researching the mining activities, remediation activities, and closure activities, of the 22 Tronox Kerr McGee uranium mines in the Ambrosia Lake Area. Assessment activities of the mines shall include radiation meter surveys and collection of soil samples for analysis and evaluation. The information will be used evaluate the priority of removal activities.

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 1/WESTON-042-14-027
Amendment # : 002
Contract # : EP-W-06-042

Vendor : WESTON SOLUTIONS, INC.

TDD Title : Tronox Mine Sites R6/R9
Purpose : EXTEND POP

Priority : HIGH
Overtime Authorized : No
Invoice Unit :

Verbal Date :
Start Date : 08/20/2014
Completion Date : 06/21/2015
Effective Date : 08/20/2014

SSID : A6KD
Project/Site Name : Tronox Mine Sites R6/R9
Project Address : Highway 509
County : McKinley
City : Ambrosia Lake
State : NM
Zip Code : 87020

Work Area : Response / Removal
Work Area Code :
Activity : Fund Lead Removal
Activity Code : RV
Operable Unit :
Emergency Code :
FPN :
Performance Based : No

Authorized TDD Ceiling :	Amount	LOE (Hours)
Previous Action(s) :	\$150,000.00	0.00
This Action :	\$0.00	0.00
New Total :	\$150,000.00	0.00

Specific Elements :
See Schedule

Description of Work :
See Schedule

Region Specific :
CERCLIS: NMN000604077
Misc 2 :

Accounting and Appropriation Information:										SFO:
Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount

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U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD #: 1/WESTON-042-14-027

Amendment #: 002

Contract #: EP-W-06-042

Vendor: WESTON SOLUTIONS, INC.

Project Officer : Will LaBombard <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code: Phone Number : 214-665-7199 Fax Number :
Contracting Officer Representative : Jon Rinehart <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : 214-665-6789 Fax Number :
Contract Specialist: Michael J. Pheeny <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : 214-665-2798 Fax Number :
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 02/12/2015 <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : 214-665-2798 Fax Number :
Other Agency Official : <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : Fax Number :

Specific Elements:

Base ORIG - Analyze -Data that has been collected.,Collect -Samples ,Document -The removal activities. Prepare a written report.,Support -The removal activities,Advise -The OSC on disposal options and completion of the removal activities.

Description of Work:

Amendment 002 - This request is to extend the period of performance to 06/21/2015. The funding ceiling and SOW remain unchanged.

Amendment 001 - This amendment requests that \$100,000 be added to this TDD. The contractor will be researching historic information and developing background information for temporary storage facility for low level contaminated soils.

Base ORIG - The TDD should be initiated with \$50,000.

The contractor shall begin researching the mining activities, remediation activities, and closure activities, of the 22 Tronox Kerr McGee uranium mines in the Ambrosia Lake Area. Assessment activities of the mines shall include radiation meter surveys and collection of soil samples for analysis and evaluation. The information will be used evaluate the priority of removal activities.

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 1/WESTON-042-14-027

Amendment # : 003

Contract # : EP-W-06-042

Vendor : WESTON SOLUTIONS, INC.

TDD Title : Tronox Mine Sites R6/R9

Verbal Date :

Purpose : INCREMENTAL FUNDING

Start Date : 08/20/2014

Completion Date : 06/21/2015

Effective Date : 08/20/2014

Priority : HIGH

Overtime Authorized : No

Invoice Unit :

SSID : A6KD

Work Area : Response / Removal

Project/Site Name : Tronox Mine Sites R6/R9

Work Area Code :

Project Address : Highway 509

Activity : Fund Lead Removal

County : McKinley

Activity Code : RV

City : Ambrosia Lake

Operable Unit :

State : NM

Emergency Code :

Zip Code : 87020

FPN :

Performance Based : No

Authorized TDD Ceiling :

	Amount	LOE (Hours)
Previous Action(s) :	\$150,000.00	0.00
This Action :	\$20,000.00	0.00
New Total :	\$170,000.00	0.00

Specific Elements :

See Schedule

Description of Work :

See Schedule

Region Specific :

CERCLIS: NMN000604077

Misc 2 :

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount
1	14	T	6A00	303DC6	2505	A6KDRS00	C001	146ARSC020-001	REMOVAL SUPPORT	\$150,000.00
2	14	T	6A00	303DC6	2505	06WQRV00	C001	146ARVC018-001	REMOVAL	\$20,000.00

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD #: 1/WESTON-042-14-027

Amendment #: 003

Contract #: EP-W-06-042

Vendor: WESTON SOLUTIONS, INC.

Project Officer : Will LaBombard <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code: Phone Number : 214-665-7199 Fax Number :
Contracting Officer Representative : Jon Rinehart <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : 214-665-6789 Fax Number :
Contract Specialist: Michael J. Pheeny <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : 214-665-2798 Fax Number :
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 04/10/2015 <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : 214-665-2798 Fax Number :
Other Agency Official : <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : Fax Number :

Specific Elements:

Base ORIG - Analyze -Data that has been collected.,Collect -Samples ,Document -The removal activities. Prepare a written report.,Support -The removal activities,Advise -The OSC on disposal options and completion of the removal activities.

Description of Work:

Amendment 003 - The QASP is being prepared and the funding is needed to complete the document. An additional \$20,000 is being requested.

Amendment 002 - This request is to extend the period of performance to 06/21/2015. The funding ceiling and SOW remain unchanged.

Amendment 001 - This amendment requests that \$100,000 be added to this TDD. The contractor will be researching historic information and developing background information for temporary storage facility for low level contaminated soils.

Base ORIG - The TDD should be initiated with \$50,000.

The contractor shall begin researching the mining activities, remediation activities, and closure activities, of the 22 Tronox Kerr McGee uranium mines in the Ambrosia Lake Area. Assessment activities of the mines shall include radiation meter surveys and collection of soil samples for analysis and evaluation. The information will be used evaluate the priority of removal activities.

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 1/WESTON-042-14-027
Amendment # : 004
Contract # : EP-W-06-042

Vendor : WESTON SOLUTIONS, INC.

TDD Title : Tronox Mine Sites R6/R9
Purpose : EXTEND POP

Priority : HIGH
Overtime Authorized : No
Invoice Unit :

Verbal Date :
Start Date : 08/20/2014
Completion Date : 07/21/2015
Effective Date : 08/20/2014

SSID : A6KD
Project/Site Name : Tronox Mine Sites R6/R9
Project Address : Highway 509
County : McKinley
City : Ambrosia Lake
State : NM
Zip Code : 87020

Work Area : Response / Removal
Work Area Code :
Activity : Fund Lead Removal
Activity Code : RV
Operable Unit :
Emergency Code :
FPN :
Performance Based : No

Authorized TDD Ceiling :	Amount	LOE (Hours)
Previous Action(s) :	\$170,000.00	0.00
This Action :	\$0.00	0.00
New Total :	\$170,000.00	0.00

Specific Elements :
See Schedule

Description of Work :
See Schedule

Region Specific :
CERCLIS: NMN000604077
Misc 2 :

Accounting and Appropriation Information:										SFO:
Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount

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U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD #: 1/WESTON-042-14-027

Amendment #: 004

Contract #: EP-W-06-042

Vendor: WESTON SOLUTIONS, INC.

Project Officer : Will LaBombard <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code: Phone Number : 214-665-7199 Fax Number :
Contracting Officer Representative : Jon Rinehart <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : 214-665-6789 Fax Number :
Contract Specialist: Michael J. Pheeny <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : 214-665-2798 Fax Number :
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 06/19/2015 <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : 214-665-2798 Fax Number :
Other Agency Official : <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>	Branch Mail Code : Phone Number : Fax Number :

Specific Elements:

Base ORIG - Analyze -Data that has been collected.,Collect -Samples ,Document -The removal activities. Prepare a written report.,Support -The removal activities,Advise -The OSC on disposal options and completion of the removal activities.

Description of Work:

Amendment 004 - Extend the TDD POP to 07/21/2015 to allow work to continue.

Amendment 003 - The QASP is being prepared and the funding is needed to complete the document. An additional \$20,000 is being requested.

Amendment 002 - This request is to extend the period of performance to 06/21/2015. The funding ceiling and SOW remain unchanged.

Amendment 001 - This amendment requests that \$100,000 be added to this TDD. The contractor will be researching historic information and developing background information for temporary storage facility for low level contaminated soils.

Base ORIG - The TDD should be initiated with \$50,000.

The contractor shall begin researching the mining activities, remediation activities, and closure activities, of the 22 Tronox Kerr McGee uranium mines in the Ambrosia Lake Area. Assessment activities of the mines shall include radiation meter surveys and collection of soil samples for analysis and evaluation. The information will be used evaluate the priority of removal activities.